availability of novel 2GDAAs. Treatment patterns are sensitive to market entry of new HCV medications. HCV treatment selection and duration may be influenced by disease severity and treatment history.

PIN97
TREATMENT PATTERNS AND CHARACTERISTICS OF MEDICARE BENEFICIARIES WITH HIV RELATED CACHEXIA
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OBJECTIVES: Cachexia is characterized by a loss in muscle mass leading to an overall reduction in function and is often related to severe chronic conditions such as cancer, kidney disease and HIV. Anabolic steroids (AS) have been seen as a potential aid to reducing the impact of cachexia in HIV patients, but AS therapy remains controversial. The purpose of this study was to characterize HIV related cachexia patients and look for differences between those treated or not treated with AS. **METHODS:** To complete this study we used Medicare LDS 5% random sample for 2011-2013. Patients were identified as having HIV (ICD-9 code 042) and then cachexia (ICD-9 code 799.4, 783.0, 783.2, and 783.3) using inpatient and outpatient claims. AS treatment was identified using HCPCS J codes. Among those with cachexia, patients receiving AS were compared to those who were not using frequencies, means, t-test, and chi-square statistics. **RESULTS:** There were over 4,000 HIV patients in the sample, 1,835 of which had cachexia. Only 54 patients received AS therapy, but there were still differences between treated and non-treated patients in terms of gender (90.74% and 72.09%, respectively, p=0.01) and race (66.67% and 45.65%, respectively, p=0.03). Treated patients had higher CCI scores (11.72 versus 9.75, p=0.01). In each group 75% of individuals received Medicare benefits because of chronic disability. Treated and untreated patients had similar ER and inpatient visits as well as similar total costs ($43,085.76 versus $29,930.82, inpatient, p=0.07). **CONCLUSIONS:** In this study we have seen that in HIV related cachexia those patients who receive AS therapy for cachexia are the most severe of an already severely ill group. This study indicates that AS treatment is being used as a last resort instead of earlier in the cachexic process when the treatment could potentially have a larger impact on a patient's disease progression.

PIN98
ASSESSING THE COST-EFFECTIVENESS OF ANTIRETROVIRAL TREATMENTS IN HIV: AN INDIVIDUAL PATIENT SIMULATION APPROACH
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OBJECTIVES: Over 100,000 people in the UK are living with human immunodeficiency virus (HIV). This once acute condition has been transformed into a near chronic condition by antiretroviral treatment (ART), providing people living with HIV (PLHIV) remain virologically suppressed. In order to maintain suppression, patients must adhere to ART. Single tablet ART regimens (STRs) are a recent advance aimed at improving adherence. However, PLHIV are more likely to develop non-AIDS related morbidities (NARMs) including diabetes and chronic kidney disease than the general population. Our objective was to develop a HIV model with the ability to capture adherence and NARMs, suitable for health technology assessments. **METHODS:** A review of HIV models concluded that existing models do not adequately account for either adherence benefits associated with STRs or the impact of non-AIDS related morbidities. We developed an individual patient simulation model in R to predict clinical and economic outcomes of ART in treatment naïve patients. Patients move through a clinically validated treatment pathway based on previous treatments and standard of care. The probability of viral suppression at 48 weeks for each antiretroviral treatment, informed by a recent network meta-analysis, determines whether CD4 levels will increase or decrease. The level of CD4, along with patient's characteristics and current antiretroviral treatment, are used to predict NARMs, opportunistic infections and morbidities. Adherence to treatment modifies the long term probability of remaining virologically suppressed. **RESULTS:** Our model predicts overall survival, CD4 over time and event rates that concur with long term studies in HIV. The model also predicts other clinical and economic outcomes including time on first treatment, QALYs and cost, stratified by resource category. **CONCLUSIONS:** This model is the first, to our knowledge, to incorporate the adherence benefit of STRs and the impact of NARMs on estimates of cost-effectiveness of ART in HIV.

PIN99
THE IMPACT OF SOCIETAL VIEWS ON MARKET ACCESS- CASE STUDIES FOR UTILIZATION OF HPV VACCINES IN CERVICAL CANCER AND PREP HIV PREVENTIVE THERAPY
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OBJECTIVES: Studies in literature have shown that the rates of awareness, intent and use of HPV vaccines and HIV preventive therapies rose during first years of launch but have dropped subsequently. The objective of this study is to assess the impact of social and behavioral factors on the acceptance and usage of these therapies. **METHODS:** A detailed review of medical literature, journals, regulatory publications, and physician blogs on HPV and HIV preventive therapies was conducted. Our research has been structured by exemplifying two case studies assessing the impact of stakeholders' opinions on acceptance and adoption of vaccines and preventive therapies **RESULTS: Case study 1** Although EMEA approved HPV vaccines in 2006, their coverage remains suboptimal. These vaccines continue to have low adoption throughout Europe, compared to other adult vaccines. This is attributable to apprehensive views among stakeholders, such as parents, having concerns on promiscuity and vaccine safety. Similar views were observed among European press and religious groups. The attitude of physicians also had a nebulous outlook, impacting adoption. **Case study 2** A similar scenario exists in the US, with PrEP HIV preventive therapy. Although medical literature supports the therapy, societal reservations have restricted market access thus increasing co-pays. This is driven by stakeholder concerns on non-compliance leading to drug resistance, promiscuity, and development off a false sense of security resulting in a drop in HIV screening rates and protective measures. The gravity of the issue is judged by the fact that, FDA has called for a REMS to take care of these issues. **CONCLUSIONS:** The utilization of a new medical service is impacted by societal perceptions, especially those conflicting with general values. In spite of regulatory approvals and national recommendations supported by clinical evidences, low adoption and high co-pays reflects that the market access is significantly driven by strong prevailing societal views.

PIN100
TRENDS OF HPV VACCINE UPTAKE, COMPLETION, AND ADHERENCE IN THE UNITED STATES: 2006-2011
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OBJECTIVES: Two human papillomavirus (HPV) vaccines were licensed to prevent HPV infections, but the utilization remains low in the United States (US). Previous trend studies about HPV vaccine utilization in the US are scarce and their conclusions are subject to internal invalidities due to methodological flaws. This study aimed to reinvestigate the trend of HPV vaccine utilization including uptake, completion, and adherence by using more accurate measurement and sophisticated statistical methods. **METHODS:** This was a retrospective cross-sectional study. Subjects aged 11-32 in the National Health and Nutrition Examination Survey 2011-2012 were extracted. Two constructs of the Andersen healthcare utilization model were adapted for variables selection. Heckman two-step sample selection models along with logistic and Poission regressions were performed to examine variables associated with vaccine uptake, completion, and adherence. **RESULTS:** Among study subjects (weighted N= 92,290,848), 19.7% were HPV vaccine users. Factors positively related to vaccine uptake included being female, younger age, going to a doctor's office or hospital for most healthcare services, and having Medicaid or other public insurance. Among HPV vaccine users, higher income was positively related to vaccine completion and adherence. Vaccine completion rate did not increase overtime. Nonetheless, subjects who received their first dose of HPV vaccine between 2008 to 2010 had better adherence, compared with subjects who received their first dose in 2006, the vaccine introduction year. **CONCLUSIONS:** We observed disparities in HPV vaccine uptake, indicating that expanding insurance coverage to HPV vaccine and increasing vaccine access through primary care services could be efficient ways to improve the low HPV vaccine initiation rate in the US. Additionally, the increasing trend of HPV vaccine utilization observed from previous studies could be mistaken due to secular accumulation overtime. Because the vaccine completion rate actually did not increase over time, more efforts should be addressed to ensure vaccine completion.

PIN101
STEERING VACCINES THROUGH THE UK SYSTEM - WHAT FACTORS INFLUENCE THE LIKELIHOOD OF POSITIVE AND NEGATIVE RECOMMENDATIONS?
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OBJECTIVES: Vaccines are one of the greatest triumphs of healthcare innovation. They have saved millions of lives, prevented destructive chronic illnesses and eased pressures on health services across the globe. However, it is surprisingly difficult for manufacturers trying to navigate the UK government system. We provide an outline of the route to potential reimbursement, using recent examples, and guidance based on lessons learned. **METHODS:** Published UK articles, The Health and Social Care Act 2012 and government and industry records were scrutinised and summarised into an outline of the process to make vaccines available. Examples of vaccines, the challenges they have faced and potential solutions to those challenges were examined. **RESULTS:** Once a licence has been obtained, usually through the European Medicines Agency, the Joint Committee on Vaccination and Immunisation (JCVI), makes recommendations to the Department of Health (DH). The JCVI covers all UK countries (subject to potential devolution of powers to Scotland). The JCVI is considering allowing industry to attend Committee meetings, which would be a huge step forward for such a secretive body. There is no scoping phase, limited stakeholder engagement; recommendations are not made public and their rationale not given, and there is no appeal element to the process. The DH agrees the price of each vaccine, which in a recent example took around a year, with input from NHS England (NHSE) and Public Health England (PHE). PHE is then responsible for implementation and procurement through its Health Protection Directorate. To draw together this process, the NHSE and DH jointly convene a Senior Oversight Committee, chaired by NHSE. **CONCLUSIONS:** Companies proposing to bring vaccines to market need to pay special attention, well in advance, to navigating this complicated structure. This is needed to achieve a satisfactory price, which rewards R&D and other costs, within a reasonable period.

PIN102
A DECISION OPTIONS APPROACH TO ANTIBIOTIC R&D INVESTMENT
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OBJECTIVES: Incentivizing antibiotic development in advance of resistance development is a critical global health policy issue. A number of policy initiatives are under development globally. Some focus on alternative reward mechanisms inclusive of lump sum payments; others focus on enhanced reimbursement once the drugs reach market. Understanding how the timing and magnitude of the rewards impact antibiotic R&D investment decisions is essential to effective and efficient policy development. **METHODS:** The R&D portfolio investment decision process and anticipated cash flow for antibiotics is modeled using decision trees composed of deterministic decision nodes and probabilistic uncertainties. (e.g., the probability of success during phase 2 trials). Monte Carlo simulations and calculations for net present values and the decision options at the various nodes are incorporated into the decision tree analysis in order to provide insights into the valuations at the vari-